AMENDMENTS TO THE CLAIMS:

Claim 1 (Currently amended): A modified radial motion (MRM) method for ~~face-milling~~ modifying lengthwise curvature of face-milling spiral bevel and hypoid gears, [[which]] capable of ~~modifying a locus of a cutter center into a curve, without changing a head cutter's geometry~~ modifying lengthwise curvature of face-milling spiral bevel and hypoid gears by providing modified radial motion of [[the]] a head cutter and by cooperating with rotation of a cradle without changing the head cutter's normal geometry;

during the process of modifying the lengthwise curvature, radial setting of the head cutter will change with the rotation of the cradle, and a rotation center of the head cutter will trace a circular arc in a machine plane if radial setting is constant, so that an adjustability of gear set will be improved without changing the bearing ratio.

Claim 2 (Currently amended): The MRM method as claimed in claim 1, wherein the modified radial motion of the head cutter and a rotation angle of the cradle are nonlinear functions of a rotation angle of work-gear [[or]] and a rotation angle of the cradle.

Claim 3 (Currently amended): The MRM method as claimed in claim 1, wherein [[the]] a locus of the head center ~~can be~~ is achieved by a constant radial setting ~~cooperating with modification of~~ and by modifying a vertical distance E_m between work-gear-axis *c-c* and cradle-axis *a-a*.

Claim 4 (Currently amended): The MRM method as claimed in claim 2, wherein the modified radial motion of the head cutter and the rotation angle of the cradle are functions of a rotation angle of work-gear [[or]] and a rotation angle of the cradle, ~~which can be~~ a relationship between the head cutter, the rotation angle of the cradle, the rotation angle of work-gear and the rotation angle of the cradle is a high-order polynomial formula [[form]].

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Claim 5 (Currently amended): The MRM method as claimed in claim 2, wherein a coefficient of the high-order polynomial formula [[form]] of the modified radial motion of the head cutter and the rotation angle of the cradle is determined by amount of correction at an arbitrary position on a tooth face.

Claim 6 (Currently amended): The MRM method as claimed in claim 4, wherein the head cutter is adjusted along unit normal of tooth surface of the cutter with an amount of correction after giving an amount of correction at arbitrary position to be corrected, a new position of the cutter center in machine plane will be ~~can be~~ correspondingly decided, and new positions of the head cutter center in machine plane will be ~~can be~~ correspondingly decided after giving amounts of correction at plural positions to be corrected, with the new positions, the coefficient of the high-order polynomial form of the modified radial motion of the head cutter and rotation angle of the cradle will be ~~can be~~ determined.

Claim 7 (Currently amended): The MRM method as claimed in claim 1, wherein the modified radial motion of the head cutter is ~~can be~~ applied to hypoid and spiral bevel generator with [[or]] and without tilt head cutter.

Claim 8 (Currently amended): The MRM method as claimed in claim 1, wherein the modified radial motion of the head cutter is ~~can be~~ applied to holding-type-orthogonal CNC hypoid and spiral bevel generator.

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